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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,427	01/17/2006	J. Donn Hethcock	0837RF-H552-US	5925

38441 7590 03/22/2011  
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EXAMINER
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AFTERGUT, JEFF H

ART UNIT	PAPER NUMBER
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1746

NOTIFICATION DATE	DELIVERY MODE
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03/22/2011

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* J. DONN HETHCOCK, J. SCOTT DRENNAN,  
and KENNETH D. COMINSKY

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Appeal 2010-003271  
Application 10/533,427  
Technology Center 1700

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Before TERRY J. OWENS, LINDA M. GAUDETTE, and  
MARK NAGUMO, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 22-26. Claims 27, 28, and 32-44, which are all of the

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

other pending claims, stand withdrawn from consideration by the Examiner.  
We have jurisdiction under 35 U.S.C. § 6(b).

*The Invention*

The Appellants claim a method for bonding at least two composite preforms together. Claim 22 is illustrative:

22. A method of bonding at least two composite preforms together comprising the steps of:

providing at least two composite preforms, each composite preform having composite fibers extending generally in an X-Y plane;

inserting discrete fibers through each preform generally in a Z direction, so as to form exposed Z-direction fibers and loops protruding outward from each preform;

overlapping the exposed Z-direction fibers and loops from one preform with the exposed Z-direction fibers and loops from another preform;

infusing a resin material through each preform and the overlapped Z-direction fibers and loops;

co-curing the preforms, thereby bonding the preforms together.

*The Reference*

Sidles	4,888,228	Dec. 19, 1989
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*The Rejections*

Claims 22-26 stand rejected under 35 U.S.C. § 102(b) or, in the alternative, under 35 U.S.C. § 103 over Sidles.

OPINION

We reverse the rejections.

*Issue*

Have the Appellants indicated reversible error in the Examiner's determination that Sidles discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, inserting discrete fibers through a preform?

*Findings of Fact*

Sidles discloses a fiber ply (15) comprising a substrate (22) having warp (24) and weft (26) filaments in X and Y directions and fibers (30) extending at 70-100° in the Z direction (col. 2, ll. 8-23). The fibers (30) extend from either side of the substrate (22) to form fiber tips (36) which may be cut pile tufts (34) or loops (32) (col. 2, ll. 24-28; Fig. 4). "The fibers [30] may form loops [32] on either side by tuft insertion techniques known to the art, or the loops [32] may be ground or cut on one or both sides to form tufts [34]" (col. 4, ll. 27-30).

*Analysis*

"Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference." *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1255-56 (Fed. Cir. 1989).

The Examiner argues that Sidles' "tuft insertion techniques known to the art" (col. 4, ll. 28-29) "clearly included insertion of discrete fiber tufts into the assembly as an alternative to insertion of a continuous fiber followed by severing one side of the same" (Ans. 3).

The Appellants argue that they are not using a known technique (Br. 15).

The Examiner's argument is not persuasive because it has been challenged by the Appellants and the Examiner has not supported the argument with evidence.

The Examiner argues that "the severing of the loops of fibers to form loops on one side and tufts on the opposed side would have resulted in discrete fibers being integrated into the base fabrics (and thus insertion of discrete fibers therein)" (Ans. 5) and "that insertion of a continuous length fiber followed by severing the same is in fact insertion of discrete fiber into the fabric plies as the claims do not exclude the subsequent cutting step" (Ans. 5-6).

The Appellants argue "that one of ordinary skill in the art of the invention would have understood that, in Sidles, continuous fibers were woven through the substrate, rather than inserting discrete fibers, as required by claim 22 and the claims dependent thereto" (Reply Br. 5-6) and that "Appellants' claim 22 requires 'inserting discrete fibers.' This step does not read on inserting a continuous fiber then severing the fiber. A fiber is not discrete if it is part of a continuous fiber that is subsequently severed" (Reply Br. 7).

"[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification." *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1256 (Fed. Cir. 2007), quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000). The Appellants' Specification states (Spec. 7:11-18):

Z-direction fibers are introduced into the dry preform using a process referred to herein as "fiber insertion," in which straight barbed needles are inserted into the preform in the Z direction. A mat of discrete fibers is placed on the preform. As the needles pass through the mat

of discrete fibers, the barbs catch and fill up with some of the discrete fibers. As the needles are forced through the layers of the preform, the discrete fibers are pulled through the preform by the barbs. As the needles retract back through the preform, the discrete fibers are released by the barbs and left in the preform as Z-direction reinforcement fibers.

The Examiner's argument is not convincing because the Examiner has not provided evidence that in view of the meaning given to the claim term "inserting discrete fibers" by the Appellants' Specification set forth above, one of ordinary skill in the art would have considered that claim term to encompass weaving continuous fibers into the substrate and then cutting or grinding them (Sidles, col. 4, ll. 29-30).

Accordingly, we find that the Examiner has not established a prima facie case of anticipation of the Appellants' claimed method by Sidles.

Regarding the obviousness rejection the Examiner argues that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ discrete fibers which were inserted into each perform [sic] in order to form a perform [sic] useful for making a composite article having high interlamina strength as suggested by Sidles" (Ans. 6).

The Appellants argue that the Examiner "has provided no evidence that one of ordinary skill in the art would have understood that altering Sidles['] process to insert discrete fibers would have been desirable or even possible to try" (Reply Br. 8).

As stated in *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of

obviousness” (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). See also *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (“A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art”). The Examiner has not provided evidence that Sidles’ method for improving delamination resistance (col. 1, l. 9) wherein loops are cut to form piles (col. 2, ll. 28-29; col. 4, ll. 27-30) would have led one of ordinary skill in the art to a step of inserting discrete fibers. The Examiner has merely provided a conclusory statement which lacks the required articulated reasoning with rational underpinning. Hence, the record indicates that the Examiner used impermissible hindsight in rejecting the Appellants’ claims.

*Conclusion*

The Appellants have indicated reversible error in the Examiner’s determination that Sidles discloses, or would have rendered prima facie obvious, to one of ordinary skill in the art, inserting discrete fibers through a preform.

DECISION/ORDER

The rejections of claims 22-26 under 35 U.S.C. §§ 102(b) and 103 over Sidles are reversed.

It is ordered that the Examiner’s decision is reversed.

REVERSED

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Application 10/553,427

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